DCLS

Division of Consolidated Laboratory Services: Department of General Services

HIGHLIGHTS

The Division of Consolidated Laboratory Services (DCLS) provides high quality laboratory testing services and support, 24/7, to a diverse group of local, state and federal agencies that serve to protect the health, safety and security of citizens of the Commonwealth and the Nation. Services include laboratory testing, consultation, training, laboratory certification, sample collection, kits and instructions, and a statewide courier service. Annually, DCLS performs over 7 million tests to identify genetic and metabolic disorders in newborn children, and to identify infectious agents and toxic chemicals in humans, animals, the environment, the food we eat, and the water we drink. Each year, DCLS trains thousands of scientists, certifies nearly one hundred laboratories, receives over 1 million samples, and prepares and distributes over 300,000 test collection kits across the state.

PREPAREDNESS AND EMERGENCY RESPONSE

- DCLS has performed terrorist threat screening for biological and chemical agents for the Library of Congress, NASA, U.S. Department of State, U.S. Postal Service, FBI, local emergency response personnel, Virginia medical treatment facilities, and the U.S. Army Corps of Engineers
- DCLS was one of the first U.S. laboratories approved by the CDC to test clinical specimens for epidemic H1N1 in 2009 and the Middle East Respiratory Syndrome Coronavirus (MERS-CoV) in 2013
- Selected by the Centers for Disease Control and Prevention as one of 13 state public health laboratories in the Nation to receive testing reagents and procedures to detect Ebola Virus using a Department of Defense developed polymerase chain reaction (PCR) assay
- Over the past few years, 24/7 emergency laboratory support was provided by DCLS for a number of well publicized events including:
  - Testing support that led to national food alerts and/or recalls including the Salmonella and aflatoxin contaminations in foods including peanut butter, peppers, tomatoes, alfalfa sprouts (2009 – 2014)
  - Testing in support of numerous Mumps outbreak investigations at local universities (2012 to 2014)
  - Emergency testing requests for emerging disease threats including suspect cases of Ebola virus, pandemic strains of influenza, measles Enterovirus D-68 (EV-D68) and MERS-CoV
  - Chemical testing for hundreds of legal cases under chain-of-custody in the Chemical Terrorism Preparedness and Emergency Response section for law enforcement investigating poisonings, deaths, food adulterations, and very unusual cases

- Testing on samples from a local Virginia hospital where Botulinum toxin B was detected in the clinical sample and from an associated environmental soil sample (2013)
- Participation in the Presidential Inaugural food testing assignments at the request of the FDA and USDA FERN Program (2013) to screen food samples for threats including *Clostridium botulinum, Bacillus anthracis*, and Staphylococcal Enterotoxin, Ricin, arsenic, cyanide and radionuclides
- Air quality testing following avian influenza decontamination efforts at a poultry farm.
- Testing of water from the James River following recurrent complaints and media reports of excessive foam
- The first laboratory in the US to detect the fungal agent associated with numerous cases of meningitis associated with a national recall of injectable steroids (2012)
- Tested specimens for a foodborne outbreak at a Boy Scout Camp in the New River Health District where over 200 Scouts were experiencing gastrointestinal illness (2011)
- Analyzed raw milk submitted by the Virginia Department of Health for radiation screening. Iodine 131, Cesium 134, and Cesium 137 testing was completed over a weekend and results were provided to the Virginia Health Commissioner (2011)
- Tested samples from a suspected "Meth Lab" including several liquids and powders (2011)
- Served as the first laboratory in the Nation to isolate a strain of Salmonella from a sample of Turkish pine nuts (2011)
- Emergency drinking water bacteriological testing for flooded wells recovering from hurricane Irene (2011)
- Provided rapid testing and disease tracking in support of a Measles virus outbreak in Northern Virginia under investigation by the Health Department (2014)
- DCLS provided radiochemistry testing capabilities and capacity in response to the Fukishima Diiachi incident in Japan (2011)
- DCLS responded with emergency testing for metals and organics found in coal fly ash following the identification that coal ash and ash pond water were leaking from a broken storm water management line into the

Dan River in Rockingham County, NC which impacted upstream water supplies for Danville and other cities within Virginia (2014)
- Provided semivolatile organics testing and results in just a few hours for "priority" water samples from a County Water Treatment Plant in response to a train derailment in Lynchburg, where cars were submerged and leaking into the James River causing a large oil spill (2014)
- Conducted followup surveillance testing for over 80 persons exposed to the highly communicable biological agent, Brucella melitensis (2013-2014)

INNOVATION

- DCLS has become a national training "Center of Excellence" over the past five years for both the CDC and USDA. The DCLS facility includes two large multi-use conference rooms and multiple surge/training laboratories designed for safely training scientists to work with chemical and biological agents
- DCLS is a member of the National Laboratory Response Network performing chemical and biological testing; the Food Emergency Response Network performing chemical, radiological, and biological testing; the Environmental Response Laboratory Network testing environmental samples for chemical warfare agents; and BioWatch Program performing testing of air filters from sites throughout Central Virginia for biological agents of terrorism
- DCLS was selected by the CDC PulseNet National Molecular Subtyping Network as the Mid-Atlantic Regional Laboratory in 2000 and provides laboratory testing support to Virginia, North Carolina, Maryland, West Virginia, Delaware, Pennsylvania, the City of Philadelphia and the District of Columbia.
- Virginia was one of the three highest ranking states in a national emergency preparedness and response survey by Trust for America's Health (TFAH). The TFAH report recognized DCLS for enhancing laboratory capabilities and providing rapid response identifying biological and chemical agents
- DCLS is an active participant in the FDA's Genome Trakr Network that performs whole genome sequencing of pathogens recovered from foods in order to assist in outbreak investigations to determine genetic similarity between patients and food within a suspected cluster of illness
- The DHS/EPA Emergency Response Laboratory Network (ERLN) selected DCLS as the first state lab to enhance testing services to include Chemical Warfare Agents in the environment
- Virginia was the first state to successfully build the necessary functionality into a public health Laboratory Information Management System (LIMS) to transmit influenza testing results to the CDC and to successful pilot standardized electronic HL7 reporting for agents of bioterrorism to CDC Laboratory Response Network
- DCLS was awarded a 5 year grant to develop a BioMonitoring program to determine the impact and health consequences of targeted chemicals that humans are exposed to each day (2014)
- Worked with the CDC to initiate in-house genetic sequencing of suspect Enterovirus D68 cases to confirm the presence of the emerging virus in citizens of the Commonwealth
- DCLS was selected in 2014 by the CDC's Laboratory Response Network (LRN) to become an advanced-level reference laboratory providing laboratory surge capacity testing, advanced testing capabilities, and assistance with multi-center validation studies
- DCLS implemented molecular serotyping of Salmonella isolates in 2013 in order to improve Salmonella disease surveillance in Virginia through decreased turnaround time in reporting to VDH

NEWBORN SCREENING PROGRAM

- DCLS performs all testing for Virginia's Newborn Screening Program as part of a legal mandate for all babies born in Virginia to be screened for 28 genetic and metabolic disorders
- The Virginia Newborn Screening Program is a partnership between the Department of General Services, Division of Consolidated Laboratory Services (DCLS) and the Virginia Department of Health (VDH), and is provided for families with new babies, statewide
- The targeted NBS disorders are present at birth, are very rare, and often result in serious life threatening conditions. Some are passed on from parents, while others are caused by a chemical imbalance. While some are life-threatening if undetected and untreated, others may slow down mental or physical development or result in other problems. These disorders can affect a child early in life, often within the first few days or weeks of life
- DCLS was awarded a two-year grant, by the CDC, to support Virginia's implementation of newborn screening for Severe Combined Immunodeficiency (SCID). SCID is a group of inherited immune disorders that if detected early in life is treatable. If undetected and untreated, most babies with SCID die before 2 years of age

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